REMARKS

Entry of the foregoing amendments, and reexamination and reconsideration of the subject application, pursuant to and consistent with 37 C.F.R. § 1.104 and § 1.112, and in light of the following remarks, are respectfully requested.

Amendments

Claims 1 and 6 have been amended to recite the mesh structure as being formed from a sock or tube (*e.g.*, application at page 4, line 15) and of a high temperature resistant alloy (as in original claim 2), and tightly wound to prevent telescoping (paragraph bridging pages 4 and 5; see also page 2, last paragraph). Claims 1 and 6 have also been amended to recite that the filter is for particulates in the exhaust of an internal combustion engine.

Claim 4 has been amended to recite the central "opening."

New claim 7 is supported at page five and Fig. 3.

A grammatical error has been corrected at page 4 of the specification.

No new matter is presented.

Rejection under 35 U.S.C. §112[2]

Claim 4 has been amended as assumed by the examiner; accordingly, this rejection may now be withdrawn.

Rejections under 35 U.S.C. §102

The rejections of claims 1 and 4 as anticipated by Schaaf (*et al.*), and of claims 1, 2, 4, and 5 as anticipated by Fletcher (*et al.*), are respectfully traversed.

First, neither of these references discloses a mesh made from a tube or sock, then folded, and then spiraled.

Schaaf discloses a filter not for high temperature applications (the patent, 1,918,006 referenced in Schaaf refers to intake air filters). Schaaf also teaches that it is desirable not to have raw edges (col. 1, ln. 20), and that there should be minimum contact between adjacent layers (col. 1, ln. 16-18). Fig. 6 and the disclosure (col. 2, ln. 11-29) teach that when the corrugated screen is folded onto

itself, adjacent faces will meet at corrugation apices, hence minimal contact between adjacent layers. The claimed knitted mesh will have many more points of contact to prevent telescoping (application at page 2, last paragraph).

An air intake filter does not require a high temperature alloy material. Further, the air intake pressure difference across the filter is less than in the exhaust, hence there is no telescoping problem as described in this application (page 2, last paragraph). Still further, Schaaf's intent for minimal contact is contrary to the present invention where the layers are wrapped sufficiently tight to prevent telescoping (paragraph bridging pages 4 and 5) in a low density mesh that does not increase exhaust flow resistance (page 2, last paragraph).

Schaaf does not disclose a "knitted wire mesh" as claimed but rather a wire screen: wire screens can be stretched because crossing wires are not bound to each other, whereas a knitted mesh cannot be stretched and will maintain is integrity because each of the wires is looped around adjacent wires.

Fletcher describes a sintered product wherein a screen (not a knitted wire mesh) is wound on a mandrel, flattened, swaged, and then sintered. Fletcher is making a heat pipe wick, a solid device for mechanically conveying heat from one location to another. Just the rolling/flattening operation reduces the openings by 50% (col. 2, ln. 49-53). During sintering the preform will inherently shrink, further decreasing the openings, and the adjacent layers will bind together (col. 2, ln. 63-66) so that openings in one layer will be obstructed by a bound wire from an adjacent layer. The result of the Fletcher device is not a filter, and so the claims are not anticipated. Neither does Fletcher render obvious the rejected claims, because there is no motivation to stop the Fletcher process at an intermediate stage and just use the starting material, flattened material, or wound flattened material. *In re Lalu*, 223 USPQ 1257 (Fed. Cir. 1984) (chemical intermediates); *In re Felton*, 179 USPQ 295 (C.C.P.A. 1973) (dropper and liquid dispensing device).

Accordingly, both of these rejections should now be withdrawn.

Rejections under 35 U.S.C. §103

The obviousness rejections of claims 2, 3, and 5 over the combination of Schaaf and Ueda (*et al.*), and of claim 6 over the combination of Schaaf and Buck, are respectfully traversed.

As noted above, Schaaf's own disclosure teaches that the device made is intended for filtering intake air.

Ueda discloses a filter where a flat solid sheet (not a screen, see col. 5, ln. 37-38; and not a knitted wire mesh) is cut and stretched, filled with a metal powder (such as by dipping in a slurry; col. 5, ln. 59-61), then sintered and annealed so that the openings in the perforated sheet are "filled permanently with the sintered mass" (col. 5, ln. 66-67). These sheets with sintered porous material are separated by spacers and formed into a filter. At best Ueda shows that a sheet can be perforated and stretched to provide an approximation to a screen. In contrast, the present claims recite a knitted wire mesh; a knit wire mesh cannot be stretched as a screen or slit sheet can be stretched. (Knit non-metal fabrics can only be stretched if the fibers are elastic, if the fibers can deform (*e.g.*, cotton or polyester rather than metal) or if the fabric is a "rib" knit. A knit has a very low or no stretch whereas a weave, such as a screen, can be stretched or deformed.)

If Schaaf is directed to air intake filters, there is no motivation to use any high temperature alloy or to regenerate the filter. Even in combination, Ueda does not overcome the deficiencies mentioned above regarding Schaaf, and *Lalu* and *Felton* countenance against taking the Ueda starting material for use in the Schaaf device. This combination of references does not suggest the claimed wire mesh structure. Schaaf teaches against "raw edges" and Ueda teaches that the filter produces uniform heating if the edges are not joined (col. 7, ln. 30-35). The claimed structure presents a raw edge only at the beginning and end of the spiral, which according to these references would provide significant advantages over their device structures. Further, Ueda teaches that in a vibrating machine (like a car; col. 7, ln. 37-46) joining the edges is useful to keep the filters and spacers together, but the joining changes the self-heating characteristics of the Ueda device. The claimed knitted mesh does not have these loose edges.

Buck shows at least *six* different ways of folding a sock made from a fibrous heat-resistant material (such as mullite, a silicate). Fig. 9 referenced in the rejection shows the sock merely wound into a spiral, which the above-mentioned background section of the instant application (page two, last paragraph) teaches can result in telescoping. Nowhere does Buck teach or suggest the particular combination of folding and then forming a spiral, regardless of whether the central portion is opened or closed (which is a function of the gas flow; *e.g.*, present application at page five, first full paragraph). With regard to new claim 7, Fig. 11 of Buck shows the portion *opposite* the fold being the leading edge (or the stream being normal to a flat, unwound filter). To the extent that Schaaf is directed to an intake air filter, there is no motivation to use the high temperature material of Buck. Even if the combination is proper, such a combination still does not arrive at the claimed structure.

Accordingly, these rejections should now be withdrawn.